

What is claimed is:

Sub A2 1. A method of producing polyoxytetramethylene glycol by ring-opening-polymerizing tetrahydrofuran in the presence of acetic anhydride and an acid catalyst, wherein said ring-opening polymerization is conducted using acetic anhydride having a diketene concentration of 10 ppm or less to produce polyoxytetramethylene glycol.

2. The method of producing polyoxytetramethylene glycol according to Claim 1 wherein the diketene concentration is 2 ppm or less.

3. A method of producing polyoxytetramethylene glycol comprising ring-opening-polymerizing tetrahydrofuran in the presence of an acid catalyst using acetic anhydride having a diketene concentration of 10 ppm or less to produce polyoxytetramethylene glycol diester, and reacting the polyoxytetramethylene glycol diester in the presence of an alkali catalyst. A

4. A method of producing polyoxytetramethylene glycol by ring-opening-polymerizing tetrahydrofuran in the presence of acetic anhydride and an acid catalyst, said acetic anhydride having a diketene concentration reduced to 10 ppm or less by ozonizing acetic anhydride containing diketenes.

Sub A3 5. A method of purifying crude acetic anhydride wherein treatment with an ozone-containing gas is conducted after distillation.

Sub C1 6. A method of producing polyoxytetramethylene glycol by ring-opening-polymerizing tetrahydrofuran in the presence of the acetic anhydride purified by the purification method of Claim 5, and an acid catalyst.

~~7. Acetic anhydride having a value of a sulfuric acid coloring test of 10 APHA or less after performing heating treatment at 80 to 120°C for 5 hours or more.~~